Current Projects - Lakes, Ponds and Reservoirs

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Stocking Survival and Population Dynamics of Adult Walleyes in Iowa's Large Natural Lakes

Natural reproduction of walleye in Iowa's natural lakes is extremely limited, therefore, annual stockings of fry and fingerlings are necessary to sustain these fisheries. In many of Iowa's natural lakes, consistent recruitment is the key to increased walleye densities; however, since these lakes often have high walleye harvest mortality, recruitment alone would not result in the walleye densities needed to meet management objectives. Therefore, a combination of improved survival and recruitment of stocked walleye and harvest regulations is needed to increase walleye densities.

Since hatchery costs are dependent on the size of fish produced, most research in Iowa has focused on evaluating the survival of fall stocked walleye fingerlings. Several years of research concluded that large (>7 inches) walleye fingerlings are needed in order to meet management objectives. Hatchery production techniques have been refined to be able to produce a larger fall walleye fingerling and currently, many natural lakes are being stocked in the fall with 9-10 inch walleye. Current research is evaluating the survival of these "advanced" walleye fingerling stockings. Preliminary findings suggest that stocking advanced fingerlings provide valuable additions to both recreational harvest and broodstock populations. In addition, recent research evaluating the contribution of 2-3 inch walleye fingerlings stocked in Clear Lake found that these fish do not survive well. We are currently evaluating the contribution of fry stocked directly from distribution tanks and those stocked via bags offshore.

Harvest regulations are also used by managers to improve walleye abundance, size structure, and growth rates. In 2007, a protected slot limit of 17-22 inches (1 fish over 22 inches, daily bag of 3 fish) was initiated on the Iowa Great Lakes and Storm Lake. The minimum length limit of 14 inches was maintained on Clear Lake. Based on angler creel surveys, walleye harvest for Spirit Lake in 2011 was the highest since 1971. Walleye harvest was the fifth highest recorded for Storm Lake and nearly doubled between 2010 and 2011 for Clear Lake. Walleye abundance estimates for each lake followed a similar pattern as angler harvest in 2011. Continued angler creel surveys and walleye population dynamics information are needed in order to properly evaluate the regulation.

Current research will monitor broodstock densities, assess various life history characteristics of the broodstock populations, and evaluate stocking success. Populations are being monitored using creel surveys, mark and recapture tagging, and extensive age and growth analysis. This information will help us understand the impacts of changes in harvest regulations and stocking strategies. Ultimately, findings will guide decisions and strategies for managing walleye populations in Iowa's natural lakes.